UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 500
DENVER, CO 80202-2466

Ref: 8EPR-ER

INITIAL POLLUTION REPORT
Basin Mining Area Site
Basin, Jefferson County, Montana

I. HEADING

Date:	**06/12/00**
Site Name:	**Basin Mining Area**
From:	**Hays Griswold, OSC**
To:	**Patty Smith, EPA Headquarters**
POLREP No.:	**Initial**

II. BACKGROUND

Site No.:	**K5**
Response Authority:	**CERCLA**
Action Memorandum:	**April 12, 2000**
Start Date :	**05/29/00**
Demobilization Date:	**N/A**
Completion Date:	**TBD**

III. SITE INFORMATION

A. Incident Category

Time-Critical, Fund-Lead, Removal Action

B. Site Description

The Buckeye/Enterprise Mines are the target of this phase of the Removal Action. These are two base metal/gold mines located immediately adjacent to each other. They are historical mines that operated from 1897 to 1908. At the Site are toxic heavy metals contaminated waste rock dumps and tailings piles.

1. Site Location

The Site is located approximately thirty miles to the south-southwest of the City of Helena, Montana, about 20 miles upstream from the town of Basin, in the south half of section 36, T8N, R8W

2. Site Characteristics

A basin wide study conducted by the USGS identified this mine as one of the top three metals contributors to Basin Creek (Boulder River Watershed). The mines are now abandoned and non-operative, but on private property, except for the tailings pile which is on National Forest land. The Buckeye/Enterprise complex has approximately 25,000 cubic yards of metals contaminated acid rock drainage (ARD) generating waste rock dumps. There is also an ARD generating tailings pile/pond of approximately 15,000 cubic yards located immediately adjacent to Basin Creek on USFS land. The USFS will participate in the removal of the tailings pile and has contributed funds to EPA via an Interagency Agreement in the approximate amount of $800,000. The USFS has led the site investigation on its land and planned that part of this Removal Action; it will continue to provide technical assistance with roads, revegetation, etc. In addition, there is an adit discharge of acid mine drainage (AMD) that flows directly to Basin Creek.

3. Description of Threat

The mine complex is a major contributor of toxic metals to the drainage. Arsenic and lead have been identified at the two mine complexes as the risk and hazard drivers; however, several other metals, including cadmium, manganese, and zinc have high levels of concentration in the waste rock piles and in Basin Creek/Cataract Creek which cause concern. The impacts to the water quality in Basin Creek are of special concern considering that Basin Creek supplies the alluvial aquifer that supplies the drinking water for the town of Basin and the city of Boulder. Contaminated soil and waste rock are transported from the two mine complexes down-gradient into other areas and surface water, including areas that are used for fishing, swimming, camping, and general recreation. An additional concern is that the mines are unrestricted, and there are signs of use by off-road vehicles and bicycles.

IV. RESPONSE INFORMATION

A. Situation

1. Removal Actions To Date

The Removal Action began May 29, 2000. The waste piles will be removed and placed in the Lutrell Pit Repository (a repository build into the pit of a modern bankrupt mine at the top of the drainage and shared by EPA and other federal agency removals ongoing in the Basin and Tenmile drainages) where they will be sealed in a lined and capped pit. The USFS tailings will also be excavated and hauled to the repository.

a. Site Assessment and Stabilization:

The USGS has extensively characterized the Site leading to its identification as a major environmental threat to the drainage. Confirmation sampling will be conducted during and following the removal activities to ensure the waste rock and tailings are removed.

b. Removal and Disposal:

On May 29, 2000, EPA Contractors initiated excavation of waste rock from the Buckeye/Enterprise mine complex and staged it in preparation for transport to the repository at the Luttrell Pit which is jointly being constructed as part of this Removal Action and the Upper Tenmile Creek Watershed Removal Action. Excavated waste rock will be transported up the Basin Creek Road system which is being improved through surface and drainage improvements. The design of these improvements and drainage control has been done in conjunction with USFS and Jefferson County by a USBR contractor through an Interagency Agreement (IAG). The main features of the Luttrell Pit Mine Waste Repository design include a liner system of a Geosynthetic Clay Layer (GCL) and High Density Polyethylene (HDPE), a leachate collection system, and a cover system consisting of a composite of a geosynthetic clay, and a flexible HDPE membrane liner, an earthen thermal barrier, and a soil vegetative support layer.

2. Next Steps

Continue consolidating satellite waste rock dumps with main dump staging area. Haul waste rock and tailings to the repository. Begin reclamation of areas. All restoration work is being coordinated with the current property owners to ensure a satisfactory return of the condition of the properties. In

general, following removal of the waste rock, where appropriate, the soil is being amended with lime or other suitable alkaline material, backfilled with clean soil, and graded to allow natural drainage. The backfilled areas will be fertilized, then seeded with native grasses. Where appropriate, native trees and shrubs will be planted. Other areas on the steep slopes may require rock cover which is consistent with natural conditions along the side slopes. Much of the area surrounding the two mine complexes is part of the Deer Lodge National Forest. Care will be taken to coordinate the re-vegetation work with the USFS.

3. Planned Removal Actions

Removal actions are being planned for next year at other abandoned mine locations, including the Crystal Mine, within the Basin Mining Areas. In addition, the Forest Service and EPA are planning Removal Actions in the Basin Creek drainage that will utilize the Luttrell Pit.

B. Key Issues

None at this time.

V. COST INFORMATION

The project ceiling for the Site is $5,677,000. Estimated costs as of 8/31 are as follows.

(IAG) USBR	**$ 40,000**
START (UOS)	**$ 65,000**
Subtotal	**$ 105,000**

VI. DISPOSITION OF WASTE

All waste rock from this Site is being placed in the Luttrell Pit repository that is being constructed as part of this Removal Action.

REMOVAL CONTINUES:
H. Hays Griswold, OSC
1500 hrs, June 13, 2000